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PUSH CONSTRUCTION OF HOT-AIR COTTON DRYERS

IMPROVE HOT-AIR COTTON DRYER -- Ashkhabad, Turkmenskaya Iskra, 17 Nov 51

In 1949 - 1950, hot-air cotton dryers designed by engineer Sabirov were built in a number of kolkhozes in Kirovskiy Rayon in Fergana Oblast', Uzbek SSR. The new dryers proved superior to existing brick-oven dryers. In 1951, Sabirov redesigned his dryer, and his new, improved apparatus has been approved for mass erection on Uzbek SSR kolkhozes, and also accepted for cotton procurement points and large kolkhozes in Turkmen SSR.

The hot-air cotton dryer consists of the following parts:

1. A tubular air heater with a capacity of 200,000 calories per hour.

2. Four drying chambers 3.5 x 2 meters and one meter high.

3. A No 8 TsAGI blower with a 3.7-kilowatt (at 1,420 revolutions per minute) motor. Where electricity is unavailable, the blower may be driven by a Moskva motorcycle, an SOT or Universal tractor, or by some other farm machine.

4. Hot-air pipes.

The tubular air heater with a removable firebox is made of burned brick reinforced with wire, and is mounted on an angle-iron frame.

Inside the air heater are 39 steel pipes 3.5 meters long and 4 inches in diameter. The pipes can be made from roofing tin. They need not be 4 inches in diameter as long as they have an equivalent heating surface. The pipes must be mounted in the brick lining very carefully so that the flames will not be blown out of the air heater into the drying chambers. The blower and electric motor are mounted on the front end of the air heater. The drying chambers are made of 3.5 x 2 meter sheets of plywood, are one meter high, and are mounted flush with the ground. At a height of 0.6 meter from the

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ground, a metal screen with a mesh of 10 x 10 or 15 x 15 millimeters is stretched across the drying chamber. The upper part of the back wall of the chamber is hinged to facilitate loading and unloading. A slide valve for shutting off the air is mounted on each chamber where the hot-air pipe comes in.

The cotton is dryed as follows: The hot gases produced by the burning fuel flow through the pipes of the air heater and then pass out into the atmosphere through a chimney. The blower forces cold air around the pipes in the air heater. The air is heated to 100 degrees centigrade and carried by a duct to the drying chambers. The hot air enters the chamber from below, under the screen. Damp cotton is placed on the screen in an even layer 25 30 centimeters thick. Each drying chamber holds 130-150 kilograms of damp cotton.

The hot air passes through the layer of cotton, removing the moisture, and then flows out into the atmosphere. The cotton must be stirred lightly during drying. While the cotton in two of the chambers is being dried, the dried cotton is removed from the other two chambers and replaced with damp cotton. This makes the drying process continuous. With a moisture removal of 6 percent, the drying process (in two chambers) takes 15-20 minutes, making it possible to dry 0.7-0.0.9 ton of cotton per hour or up to 20 tons of cotton per day.

Hot-air drying removes mechanical impurities from the cotton and does not impair its quality. The hot-air dryer operates on coal or guza-pai (cotton stalks). Hourly fuel consumption is 80 kilograms of coal or 100 kilograms of guza-pai.

The cotton dryer should be provided with adequate fire-fighting apparatus. -- A. Smirnov, Deputy Minister of Cotton Growing, Turkmen SSR.
/See appended diagrams of machine./

Tashkent, Pravda Vostoka, 24 Oct 51

Sabirov's cotton dryer can dry 22 to 25 tons of cotton a day. The cost of the dryer is between 4,500 and 5,000 rubles.

DESIGNS COTTON DRYER WITH ELECTRIC HEATER -- Tashkent, Pravda Vostoka, 24 Nov 51

V. G. Pastorov, a mechanic of the Tashkent Elektrokabel' Plant, has designed a cotton dryer with an electrical heating element made of spiral Nichrome wire. The dryer's air heater is 0.7 x 0.7 meter and one meter high. It is made of sheet iron 2-3 millimeters thick, or of brick. A 0.5-kilowatt electric motor operating a Sirocco blower is mounted on the upper part of the air heater, and blows the hot air into the drying chambers.

The dryer can process up to 10 tons of raw cotton a day. If the cotton is constantly stirred, it takes a maximum of 30 minutes to dry 200-240 kilograms of cotton.

The dryer costs 1,500-2,000 rubles and is simple to build. It costs less to dry cotton with the electrical dryer than with combustion dryers, and the danger of fire is eliminated. Several enterprises are building electrical cotton dryers.

Ashkhabad, Turkmenskaya Iskra, 1 Dec 51

The Ashkhabad Krasnyy Metallist Plant is filling an order for powerful blowers for hot-air cotton dryers on time.
/Diagrams follow./

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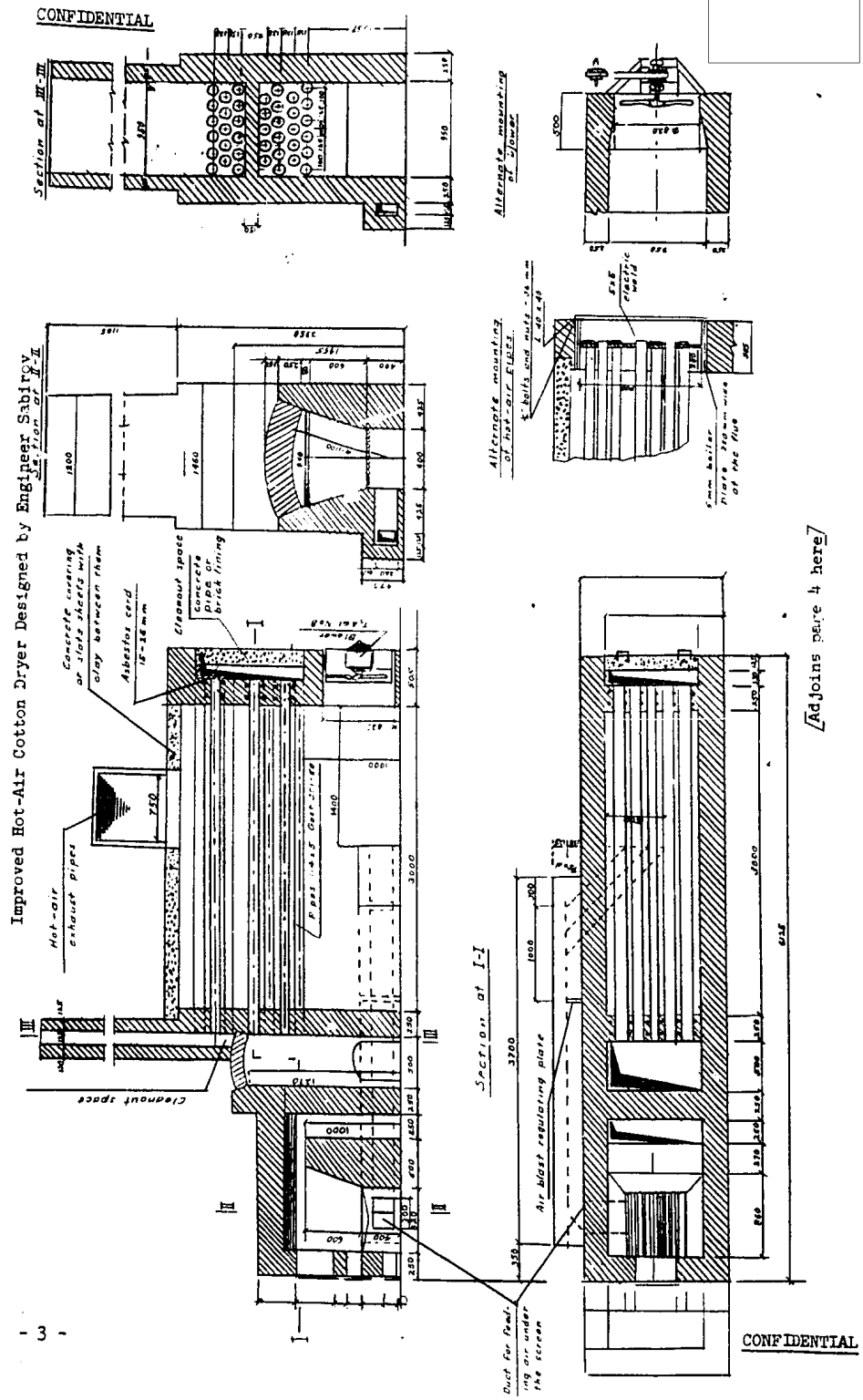

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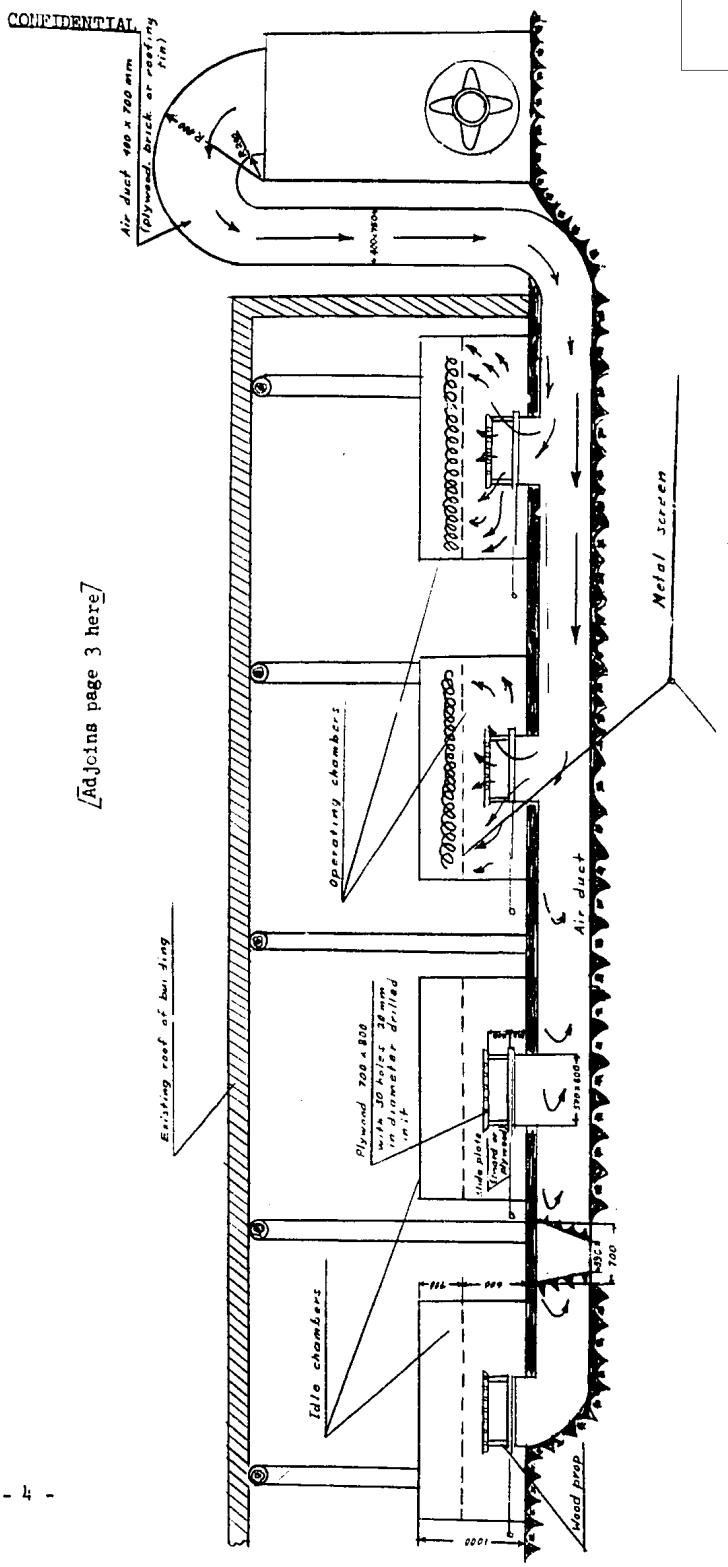

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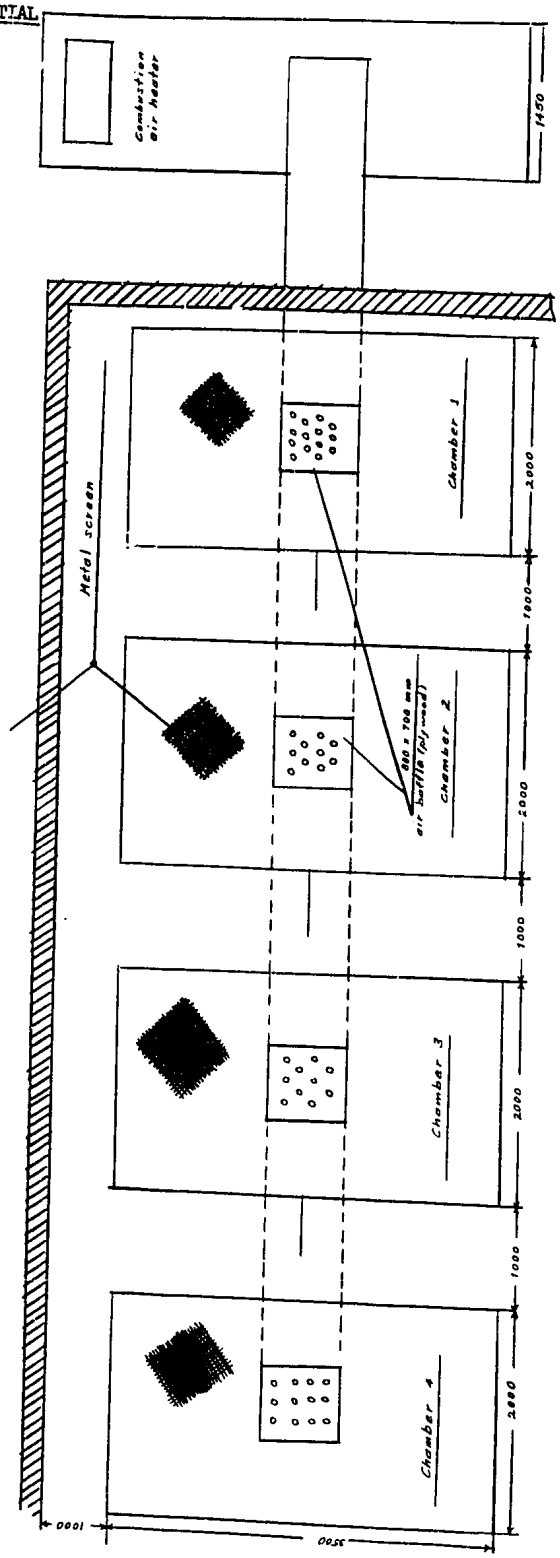

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